



PETRONAS

Technical Data Sheet

Revision Date: 20.08.2019 Rev. 02

PETRONAS GEAR MEP SERIES

Premium Performance Heavy Duty Industrial Gear Oil

PETRONAS Gear MEP Series are premium performance industrial gear oils specially developed for various types of enclosed industrial gears operating under normal to heavy duty conditions. Formulated with high quality selected mineral base oils enhanced with advanced extreme pressure, anti-wear, anti-oxidant, anti-rust and anti-foam additives, PETRONAS Gear MEP oils provide excellent extreme pressure and anti-wear protection, smooth operation of the gear drives and up to 1,5x longer lasting performance*.

PETRONAS Gear MEP Series meets or exceeds key industrial specifications and OEM requirements.

*vs. minimum requirements of industrial gear oils to pass the viscosity increase test (ISO 4263-4 @95°C)

Applications

PETRONAS Gear MEP Series are recommended for use in:

- various types of enclosed industrial gears (spur/helical/bevel/planetary) with circulation or splash lubrication systems operating at bulk oil temperature up to 110°C
- gears drives subjected to heavy loads
- gears drives sensitives to sludge formation
- non-gear applications include shaft couplings, and heavily loaded plain bearings operating at slow speeds

Features and Benefits

Features	Benefits
Excellent extreme pressure protection	Excellent extreme pressure performance giving long gear life in severely loaded gear drives
Excellent anti-wear protection	Protects equipment components from excessive wear and provides longer equipment life
Excellent thermal and oxidation stability	Maintains performance levels under high temperatures and pressure, enabling long oil drain intervals
High resistance to sludging	High cleanliness for sludge free gear drives
High rust & corrosion protection	Inhibits the corrosion process that occurs in presence of water, improving equipment life
High water separability	Due to high water separability the gear drives are protected from water degenerative effects, maintaining system efficiency at required level and reducing maintenance costs
High multi metal compatibility	Compatible with most metal alloys ensuring trouble free performance of the system
High compatibility with a range of seal and elastomer materials	Compatible with most seals and elastomers, which prevents oil leaks and contamination due to seal erosion

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Typical Properties

Characteristic	Method	Specification	68	100	150	220
Specific Gravity @15°C	ASTM D 4052	Report	0,887	0,877	0,880	0,881
Kinematic Viscosity at 40°C, cSt	ASTM D 445	±10%	68	100	150	220
Kinematic Viscosity at 100°C, cSt	ASTM D 445	(1)	8,5	11,0	14,4	18,5
Viscosity Index, min	ASTM D 2270	Min. 90	94	94	93	93
Flash Point, °C	ASTM D 92	**	230	240	240	250
Pour Point, max °C	ASTM D 97	**	-30	-27	-27	-21
TAN, mgKOH/g	ASTM D 664	Report	0,16	0,16	0,16	0,16
Water Separability, 40/37/3 – mins	ASTM D 1401	**	10	15	15	15
Copper Strip Corrosion	ASTM D 130	Max. 1	1b	1b	1b	1b
Foam Sequence I, mL	ASTM D 892	Max. 100/10	0/0	0/0	0/0	0/0
Foam Sequence II, mL		Max. 100/10	0/0	0/0	0/0	0/0
Foam Sequence III, mL		Max. 100/10	0/0	0/0	0/0	0/0
Weld Load, Kgf	ASTM D2783	(1)	400	400	400	400
Timken OK Load, lbs	ASTM D2782	(1)	70	70	70	70
FZG, Stages Passed ***	ISO 14635-1	Min. 12	>12	>12	>12	>12
Cincinnati Thermal Stability	CCMC Thermal B	Pass	Pass	Pass	Pass	Pass
Characteristic	Method	Specification	320	460	680	1000
Specific Gravity @15°C	ASTM D 4052	Report	0,884	0,894	0,932	0,945
Kinematic Viscosity at 40°C, cSt	ASTM D 445	±10%	320	460	680	1000
Kinematic Viscosity at 100°C, cSt	ASTM D 445	(1)	23,7	29,9	38,3	48,9
Viscosity Index, min	ASTM D 2270	**	94	93	93	93
Flash Point, °C	ASTM D 92	**	240	240	250	250
Pour Point, max °C	ASTM D 97	**	-21	-18	-18	-12
TAN, mgKOH/g	ASTM D 664	Report	0,16	0,16	0,16	0,16
Water Separability, 40/37/3 – mins	ASTM D 1401	**	30	30	45	45
Copper Strip Corrosion	ASTM D 130	Max. 1	1b	1b	1b	1b
Foam Sequence I, mL	ASTM D 892	Max. 100/10	0/0	0/0	0/0	0/0
Foam Sequence II, mL		Max. 100/10	0/0	0/0	0/0	0/0
Foam Sequence III, mL		Max. 100/10	0/0	0/0	0/0	0/0
Weld Load, Kgf	ASTM D2783	(1)	400	400	400	400
Timken OK Load, lbs	ASTM D2782	(1)	70	70	70	70
FZG, Stages Passed ***	ISO 14635-1	Min. 12	>12	>12	>12	>12
Cincinnati Thermal Stability	CCMC Thermal B	Pass	Pass	Pass	Pass	Pass

All technical data is provided for reference only and all specification based on DIN 51517-3 and ISO 12925-1

**Individual limits accordingly with each viscosity grade / (1): not required in specification / SS is available upon request including quality control limits /

*** PETRONAS GEAR MEP Series passed stage 14 when FZG was run, however according to ISO 14635-1 tests results higher than 12 should be reported as >12.

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Performance Levels

- AGMA 9005-E02
- David Brown S1.53.101
- DIN 51517 Part III
- Fives Cincinnati Machine Gear
- GM LS 2 EP Gear Oil
- ISO 12925-1 CKC/CKD
- U.S. Steel 224

Health, Safety and Environment

This product is unlikely to present any significant health and safety hazards when used in the recommended application. Avoid contact with skin. Wash immediately with soap and water after skin contact. Do not discharge into drains, soil or water.

For further detail regarding storage, safe handling, and disposal of product, please refer to product SDS or contact us at: www.pli-petronas.com.

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